



MANAGING INFORMATION TECHNOLOGY:

Nevada's Department of Information Technology Strategic Plan

Prepared By
Department of Information Technology
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Version 5.0

PREFACE

The Department of Information Technology (DoIT) continues to aggressively evaluate our technical strategy to find ways to better serve our customers. This document depicts the immediate IT needs of the state, and the recommended strategies to meet these needs. This document is a work in progress and will be updated as necessary with minor revisions and major changes. The next issuance will note the status of legislative approved tactical plans aligned with the strategic issues.

This plan will continue to grow and change as technology and the needs of Nevada State government change. It is to be our continuing guide in the 21st Century.

WHAT'S NEW?

- Update to the IT Strategic Plan
- Strategy Chart
- Technology Trends
- Technology Assumptions
- Strengths and Weaknesses
- Principles
- References
- Glossary of Terms

VALUES

Citizen Focus

Government exists to serve its citizens. Government services and information should be easily and equitably accessible and delivered in a simple, secure, effective, courteous and respectful manner. Government is entrusted with data about individuals and groups that is private and inappropriate release of that data to the public is a violation of the public trust. The citizen's right to privacy will be protected.

Enterprise View

A comprehensive view of government and its missions must take priority over that of any individual agency or entity. An enterprise-wide view allows government to leverage the taxpayers' investments to provide the services required and to develop "value added" services.

Cooperation and Standardization

Cooperation and sharing between and among state agencies, other levels of government, and public partners is crucial and fundamental to our work and success. The collective action among agencies, levels of government and with vendors will produce "standards" which form a common framework to allow citizens, government, and business to efficiently communicate and complete transactions.

Workforce Excellence

Innovation should be promoted and rewarded. Decisions should be made at the lowest effective level by a skilled, committed workforce within government to encourage change and improve productivity.

Effective Technology Investments

Proactive technology investments are the means to creating flexible responses to fluid business and program needs.



VISION

Nevada's Department of Information Technology is the recognized IT Leader of the State of Nevada. In cooperation with other state agencies, we will guide the state through a continuous process of efficient IT investment and development. By proactively forecasting both technology trends and our customers' needs, we provide easy access to information and services to citizens, policy makers, and other customers.

OBJECTIVES



1

Cultural Change

Develop stronger working relationships within the Department of Information Technology (DoIT) and with DoIT customers, various communities, stakeholder groups, educational partners, governments and their agencies.

2

Information Security

Ensure a secure physical and technical environment and protect data and IT resources for the successful fulfillment of the mission of the State and the agencies that provide services to the citizens of Nevada.

3

Project Oversight

Support major IT projects through project oversight, project management standardization and training..

4

IT Governance

Align state IT management strategy with the needs of citizens, businesses and other government entities..

5

Enterprise Architecture

Establish and administer an enterprise information technology (IT) infrastructure plan and architecture framework that encourages effective and efficient use of state IT assets through interagency cooperation and collaboration.

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EXECUTIVE SUMMARY

This Plan addresses fundamental questions of *strategy* regarding how information technology (IT) should be deployed to best serve the State of Nevada's future.

IT STRATEGY

The Department of Information Technology (DoIT) IT strategy is based on an enterprise-wide viewpoint and a customer service, customer-driven approach. The strategy does not differentiate between agency ownership of IT resources, nor who must or may not use services. This strategy reflects the values of the consumers of state IT: those citizens, businesses and other government entities that benefit from our collective IT services.

The Department of Information Technology must focus on five key strategic initiatives in the coming years:

Strategy #1: Customer Service

Cultural Change – TAKE CARE OF OUR CUSTOMER BY DEVELOPING STRONGER WORKING RELATIONSHIPS WITHIN THE DEPARTMENT OF INFORMATION TECHNOLOGY (DoIT) AND WITH DoIT CUSTOMERS, VARIOUS COMMUNITIES, STAKEHOLDER GROUPS, EDUCATIONAL PARTNERS, GOVERNMENTS AND THEIR AGENCIES.

Strategy #2: Secure Environment

Information Security – PROTECT OUR SYSTEMS BY ENSURING A SECURE PHYSICAL AND TECHNICAL ENVIRONMENT AND PROTECTING DATA AND INFORMATION TECHNOLOGY RESOURCES FOR THE SUCCESSFUL FULFILLMENT OF THE MISSION OF THE STATE AND THE AGENCIES THAT PROVIDE SERVICES TO THE CITIZENS OF NEVADA.

Strategy #3: Managing New Investments

Project Oversight – SUPPORT MAJOR INFORMATION TECHNOLOGY PROJECTS THROUGH PROJECT MANAGEMENT STANDARDIZATION AND TRAINING.

Strategy #4: Effective and Efficient

IT Governance – IMPROVE MANAGEMENT AND ALIGN STATE IT MANAGEMENT STRATEGY WITH THE NEEDS OF CITIZENS, BUSINESSES AND OTHER GOVERNMENT ENTITIES.

Strategy #5: Enterprise-wide View

Enterprise Architecture – REALIZE THE POSSIBILITIES OF TECHNOLOGY BY ESTABLISHING AND ADMINISTERING AN ENTERPRISE INFORMATION TECHNOLOGY (IT) INFRASTRUCTURE PLAN AND ARCHITECTURE FRAMEWORK THAT ENCOURAGES EFFECTIVE AND EFFICIENT USE OF STATE IT ASSETS THROUGH INTER-AGENCY COOPERATION AND COLLABORATION.

IT OBJECTIVES

The Department of Information Technology must focus on five objectives in support of these strategic initiatives:

Cultural Change – “Take Care Of Our Customers”

Cultural Change is a series of processes of establishing strong support from within and outside DoIT that serves to enhance the development of IT programs and services produced in the State of Nevada.

Strategic Objective: Develop stronger working relationships within the Department of Information Technology (DoIT) and with DoIT customers, various communities, stakeholder groups, educational partners, governments and their agencies.

A customer service component is critical to this strategic technology plan. Technology impacts both internal and external customers and teamwork is vital to the success of achieving the goals of this plan. If we endeavor to be a “customer-driven” organization we must follow a commitment to customer service.

Information Security – “Defending Nevada’s Technology”

Security includes the protection against unauthorized disclosure, transfer, modification, or destruction, whether accidental or intentional as well as technical security measures that involve communications security, cryptography, and computer security.

Strategic Objective: Ensure a secure physical and technical environment and protect data and IT resources for the successful fulfillment of the mission of the state and the agencies that provide services to the citizens of Nevada.

To implement the State of Nevada security strategy specific areas are being identified: training, accreditation, marketing and disaster recovery / business resumption.

Project Oversight – “You Can’t Solve What You Don’t Know”

Project Oversight is the evaluation and communication of overall project performance on a regular basis to provide confidence that the project will satisfy the intended business result and be completed on time and on-budget.

Strategic Objective: Support major IT projects through project oversight, project management standardization and training.

The Project Oversight Program helps to ensure the effective and efficient utilization of state resources. Oversight of project management will help ensure costs are managed and resources are used to their maximum potential. Project oversight acts as a check-and-balance for project management processes such as risk management, quality management, cost management, resource management, change management, contract management and procurement management.

IT Governance – “Improving IT Management”

Continue to improve the IT model to be at the forefront of citizen service through technology, continually improving our skill sets, our products, and our processes.

Strategic Objective: Align state IT management strategy with the needs of citizens, businesses and other government entities.

Improvement in the management of IT in state government is important so that technology resources and investments provide greatest benefits at the least cost and increase services to citizens. The plan provides a foundation for organizational changes and the setting of state standards. These changes support interoperability, consistency, and effectively managing training and total costs.

Enterprise Architecture – “Realizing the Possibilities of 21st Century Technology”

Architecture is the blueprint and methodology that describe information systems, their components and relationships in support of the business in the enterprise.

Strategic Objective: Establish and administer an enterprise information technology (IT) infrastructure plan and architecture framework that encourages effective and efficient use of state IT assets through inter-agency cooperation and collaboration.

The development and use of IT enterprise architecture is fundamental to providing consistent and coherent service across the enterprise. By contributing, supporting and aligning with IT enterprise architecture, state agencies can realize the benefits that result from coordinated efforts. These benefits include but are not limited to efficiencies of scale, knowledge and asset sharing, and effective use of new technologies.

IT STRATEGIC PLAN

OVERVIEW

Why a Statewide IT Strategy?

The intention of the Department of Information Technology's (DoIT) enterprise-wide IT strategy is to create a tangible, measurable guide to ensure that the State of Nevada's IT investment is responsive to the expectations of citizens, businesses and other government entities. The plan links to the Governor's Key Functional Goal number 8 for the State of Nevada: Maximize use of the Internet and Other Technology to make government more accessible and more economical¹, and takes into account anticipated technology trends and basic assumptions².

The strategic plan is broad in scope and highly visible. It provides the supporting framework to develop specific tactical plans, which translate strategy into reality. The time horizon is 3 – 5 years, with periodic review and update.

A documented enterprise-wide IT strategy provides:

- Path to the Future
- Shared Vision
- Accountability
- Benchmarking for IT Project Proposal Evaluation and Funding
- Cost Savings and Efficiency

Scope of this IT Strategy

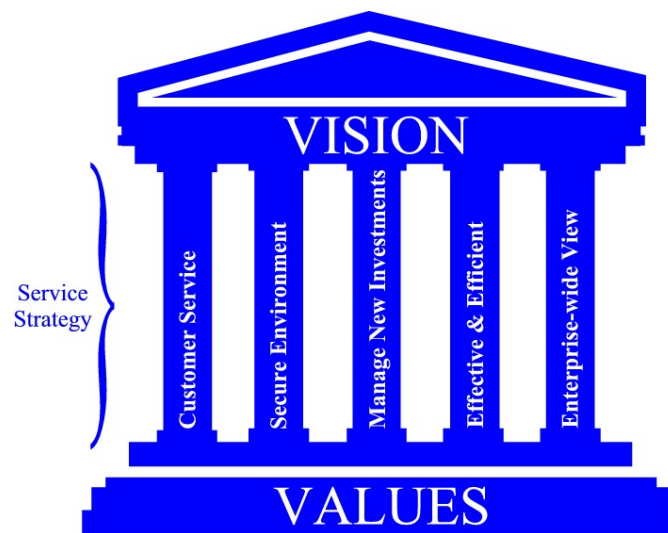
To be truly successful, a strategy must reflect the shared objectives of all the State of Nevada information technology stakeholders with implementation details defined within specific tactical plans. This proposed IT strategy is based upon an enterprise approach.

¹ Governor's Statewide Functional Goals, Attachment B, 2005 – 2007 Budget Instructions
<http://budget.state.nv.us/05-07BudInst/AttachB.pdf>

² Appendix B, Technology Trends; and Appendix C, Technology Assumptions

INTRODUCTION

The vision, values and service strategy of the Department of Information Technology's (DoIT's) Strategic Plan provide the foundation on which the following objectives, goals and strategic issues are built. Strategic issues are broad areas that must be addressed to accomplish our goals and achieve our vision. Both the broad strategic issues and their more specific goals are dynamic and responsive to changing needs. The following strategic issues and goals address a series of major objectives and will serve to address our immediate challenges.



Vision

Nevada's Department of Information Technology is the recognized IT Leader in the State of Nevada. In cooperation with other state agencies, we will guide the state through a continuous process of efficient IT investment and development. By proactively forecasting both technology trends and our customers' needs, we provide easy access to information and services to citizens, policy makers, and other customers.

Values

As DoIT acts to accomplish this vision, the following principles and values will guide its decisions and strategies:

Citizen Focus

Government exists to serve its citizens. Government services and information should be easily and equitably accessible and delivered in a simple, secure, effective, courteous and respectful manner. Government is entrusted with data about individuals and groups that is private and inappropriate release of that data to the public is a violation of the public trust. The citizen's right to privacy will be protected.

Enterprise View

A comprehensive view of government and its missions must take priority over that of any individual agency or entity. An enterprise-wide view allows government to leverage the taxpayers' investments to provide the services required and to develop "value added" services.

Cooperation and Standardization

Cooperation and sharing between and among state agencies, other levels of government, and public partners is crucial and fundamental to our work and success. The collective action among agencies, levels of government and with vendors will produce "standards" which form a common framework to allow citizens, government, and business to efficiently communicate and complete transactions.

Workforce Excellence

Innovation should be promoted and rewarded. Decisions should be made at the lowest effective level by a skilled, committed workforce within government to encourage change and improve productivity.

Effective Technology Investments

Proactive technology investments are the means to creating flexible responses to fluid business and program needs.

Service Strategy

DoIT provides IT services based upon the needs of our customers. These customers include the citizens, state agencies, political subdivisions, school districts, and federal agencies. DoIT will assess cost needs and approach service design from the perspective of value and ensure that the organization is focused on the ultimate purpose, which is serving the customer.

Mission

DoIT will support an enterprise information system that provides an easily accessible, secure, reliable and accurate infrastructure using innovative partnerships and offering collaborative and creative solutions to problems. DoIT will lead with standards that serve as a roadmap. DoIT will be a key enabler to promote more informed decisions by policy makers and the public by providing easier access to better information and governance.

OBJECTIVES, GOALS AND STRATEGIC ISSUES

Objective 1: Cultural Change

Cultural Change is a series of processes of establishing strong support from within and outside DoIT that serves to enhance the development of IT programs and services produced in the State of Nevada.

Goals and Strategic Issues

Take care of our customer by developing stronger working relationships within the Department of Information Technology (DoIT) and with DoIT customers, various communities, stakeholder groups, educational partners, governments and their agencies.

A customer service component is critical to this strategic technology plan. Technology impacts both internal and external customers and teamwork is vital to the success of achieving the goals of this plan. If we endeavor to be a “customer-driven” organization we must follow a commitment to customer service.

- 1.a. Share strategic goals and objectives across all DoIT Units
 - Communicate and examine the goals and directions on a quarterly basis; measurement updates and status to be shared quarterly.
 - Ensure the broad prospective and vision to provide maximum value to the taxpayer is held by all staff. Develop service to cost ratios to provide feedback.
 - Conduct Management By Walking Around (MBWA) visitations and skip-level meetings (meetings with employees without their supervisors present) with all DoIT staff;
 - Establish prioritization processes for project completion and work flow; link to goals and objectives.
- 1.b. Improve communication with the customer; change methods of enforcing authority and improve perceptions.
 - Use customer satisfaction feedback mechanisms to identify origination of difficulties and steps to improve communication and perceptions.
- 1.c. Increase coordination and communication skills and methodology to interact with diverse agencies.
 - Institute a Communication and Customer Service training process and periodic update. Effect a positive change in culture.

- Establish best practices user groups and mechanisms. (information technology managers, listserv's, e-mail, other groups)
 - Encourage additional state technology user groups towards the strategic tier of infrastructure and services. (LINUX, Geographic Information Systems (GIS) etc.)
 - Develop recommendations for a coordinated approach to training and users on the strategic tier of platforms and O/S.
- 1.d. Ensure adequate planning takes place, with execution and follow through to completion.
- Ensure internal planning is done on all internal initiatives, with prioritized resource requirements detailed out and accounted for, and necessary TIRs completed.
 - Establish internal management processes using skills of DoIT Staff for internal initiatives. The process is to ensure adequate follow through. Accountability, reporting mechanisms are in place and effective.
 - Establish a functional review/internal control/training officer to provide necessary feedback mechanism.
- 1.e. Design DoIT "100 %" billing structure to allow for adequate training and planning functions.
- Include Internal Training requirements within planned hours for DoIT PSPs and other issues.

Objective 2: Information Security

Security includes the protection against unauthorized disclosure, transfer, modification, or destruction, whether accidental or intentional as well as technical security measures that involve communications security, cryptography, and computer security.

Goals and Strategic Issues

Protect our systems by ensuring a secure physical and technical environment and protecting data and information technology resources for the successful fulfillment of the mission of the state and the agencies that provide services to the citizens of Nevada.

To implement the State of Nevada security strategy specific areas are being identified: training, accreditation, marketing and disaster recovery / business resumption.

- 2.a. Develop Information Security awareness training.

- Establish a training plan for various levels of user community.
 - End user (including all employees)
 - Management
 - System administrative
 - Security officers
 - Legislators
 - Coordinate an awareness training program.
 - Establish a security orientation program.
- 2.b. Identify resources sufficient to accomplish Information Security Mission.
- Investigate alternative funding sources.
 - Seek additional executive and legislative funding and support.
- 2.c. Promote participation and collaboration of the State Information Security community.
- Increase scope, knowledge base, and contribution, Including:
 - Identification of ISO's
 - Expansion of community
 - Community ownership
 - Accountability
- 2.d. Establish reliable IT - Continuity of Operations (COOP) processes.
- Establish the reliable COOP processes for varying levels of disaster.
 - Define the process and procedures
 - Support mission critical functions
 - Community ownership
 - Communications
 - Computer Incident Response Team (CIRT)
 - Statewide Information Sharing Advisory Committee (ISAC)
- 2.f. Empower business stakeholders with consistent Information Security standards.

- Establish security standards and requirements based on agency critical functions and State of Nevada's willingness to accept risks.
- 2.g. Implement an accreditation model.
- Implement the model as developed.
- 2.h. Collaborate and establish effective statutory enforcement authority.
- Garner the support and enforcement necessary by executive and legislative branch officials.
 - Coordinate with applicable task force and state level committees.

Objective 3: Project Oversight

Project Oversight is the evaluation and communication of overall project performance on a regular basis to provide confidence that the project will satisfy the intended business result and be completed on time and on-budget.

Goals and Strategic Issues

Support major information technology projects through project management standardization and training.

The Project Oversight Program helps to ensure the effective and efficient utilization of state resources. Oversight of project management will help ensure costs are managed and resources are used to their maximum potential. Project oversight acts as a check-and-balance for project management processes such as risk management, quality management, cost management, resource management, change management, contract management and procurement management.

- 3.a Identify, Document, and Standardize IT Planning and Production Integration Processes
- Define Project Management within State of Nevada
 - A full project management methodology will be developed which describes the Project Life Cycle and specifies the roles and responsibilities of the participants in each phase of the life cycle.
 - Develop Project Oversight deliverables in process format, with first draft by June, 2005.
 - Provide plans and requirements for project management oversight by June, 2005.

- Develop and implement policies and procedures within the State of Nevada.
 - On-going project management activities will follow accepted state policies, standards, and procedures to ensure that projects meet objectives and procedures and practices are used to measure and track results.
 - Project management procedures will be developed by July, 2005.
 - Formal project management practices will be established. A comprehensive set of procedures and techniques based on government, industry, and Project Management Institute (PMI) models will be developed, reviewed and approved by the IT Project Oversight Committee (ITPOC).
 - Practices targeted for adoption by July, 2005.
 - Integrate IT project management into all phases of the project life cycle.
 - A process to facilitate the implementation and control of project management phases at all levels of state government will be developed.
 - Coordination between the Department of Information Technology Planning and Contracts Administration units, Department of Administration Budgets and Purchasing divisions, Legislative Council Bureau (LCB) and other responsible participants will ensure success.
 - Integration improvements as noted above will be accomplished by September, 2005.
- 3.b Develop Information Technology Project Management Training.
- Establish Training within the State of Nevada.
 - Deploy project management best practices to project managers, and develop training, mentoring, and support programs to improve IT project management.
 - Develop a mentoring program within the State of Nevada.
 - Coaching and training guidelines will be developed by September, 2005.
 - Introduce overall awareness of planned mentoring endeavors to Nevada IT Operations Committee (NITOC) committees after September 2005.

- Develop a training program for IT project management.
 - A multi-tiered training and qualification program will be planned and developed for State of Nevada IT projects by March, 2006. This program will qualify state personnel to do project management as required by State Administrative Manual (SAM) and according to project complexity, risk, and impact to the State.
 - PM certification and ongoing professional development units (PDU's) will be scheduled for Project Oversight Unit (POU) personnel on an ongoing basis.
- 3.c. Promote the Awareness of IT Project Oversight and Project Management Practices
- Establish the mechanism to promote the Project Oversight Unit (POU) attributes or the advantages/benefits of the program.
 - POU roles, responsibilities, project oversight metrics, and participation will be increasingly apparent in state policies, procedures, standards, and practices in the State's governing statutes.
 - Ensure a communication program is in place to disseminate the status and successes of the Project Oversight Unit (POU).
 - A well targeted and effective communication program will be developed and in place.
 - Kick off of the program with development of brochure and awareness materials for customer agencies by May, 2006.

Objective 4: IT Governance through Effectiveness and Efficiency

To improve management of IT in state government so that technology resources and investments provide the greatest benefits at the least cost and increase services to citizens.

Goals and Strategic Issues

Improve IT Management and align state IT management strategy with the needs of citizens, businesses and other government entities.

- 4.a. IT Governance: Continue to develop an enterprise wide technical advisory structure for the state.
 - Expand the IT Oversight Committee governance structure.

- Develop a technology framework that provides for the integration of government services and information. Continue to develop an enterprise wide technical advisory structure for the state.
- Develop a technology framework that provides for the integration of government services and information.
- 4.b. Continuous Improvement: DoIT focus on internal organizational design and improved methodologies meet expectations. With successful implementation of improved processes, which includes project management and quality assurance, the goal is to reduce total project life cycle costs and delays. To continue to be at the forefront of citizen service through technology, continually improving our people, our products, and our processes.
 - Collect data on DoIT functions and best demonstrated practices and set realistic goals.
 - Brainstorm and facilitate idea generation with management review. Ensure linkage to key strategic initiatives.
 - Target implementation.
 - Define measures of success and regularly monitor and measure performance.
- 4.c. Performance Goal: Meet the needs of agencies, employees, and citizens through the delivery of efficient and effective products and services.
 - Define measures of success and regularly monitor and measure performance.
- 4.d. Performance Value: Establish measures to value performance. Agencies may evaluate their IT systems according to how well they serve the agency's processes and needs—not how well they respond to citizens' needs. Systems are often evaluated by the percentage of time they are working, rather than the internal and external performance benefit they deliver to the programs they support.
 - Define measures of success and regularly monitor and measure performance.
- 4.e. Technology Leverage: Agencies may use IT to automate existing processes, rather than to create more efficient and effective solutions that are now possible because of commercial E-business lessons learned.

- Encourage expanding technology project prioritization protocol through the IT Strategic Planning Committee Structure.
 - Develop an enterprise wide view of all IT projects before request for funding and encourage an atmosphere of reusable IT infrastructure.
 - Share information and integrate federal, state and local data where appropriate and possible;
 - Integrate IT planning with the development of business objectives to ensure alignment of IT and business goals.
- 4.f. Islands of Automation: Agencies generally buy systems that address internal needs, and rarely are the systems able to inter-operate or communicate with those in other agencies. Consequently, citizens have to search across multiple agencies to get service, businesses have to file the same information multiple times, and agencies cannot easily share information.
- Encourage expanding technology project prioritization protocol through the IT Strategic Planning Committee Structure.
 - Develop an enterprise wide view of all IT projects before request for funding and encourage an atmosphere of reusable IT infrastructure.
 - Share information and integrate federal, state and local data where appropriate and possible.
- 4.g Resistance to Change: Budget processes and agency cultures perpetuate obsolete bureaucratic divisions. Budgeting processes have not provided a mechanism for investing in cross-agency IT. Moreover, agency cultures and fear of reorganization create resistance to integrating work and sharing use of systems.
- Encourage expanding technology project prioritization protocol through the IT Strategic Planning Committee Structure.
 - Develop an enterprise wide view of all IT projects before request for funding and encourage an atmosphere of reusable IT infrastructure.
 - Share information and integrate federal, state and local data where appropriate and possible.

Objective 5: Enterprise Architecture

To improve management of IT in state government so that technology resources and investments provide the greatest benefits at the least cost and increase services to citizens.

Goals and Strategic Issues

Realize the possibilities of technology by establishing and administering an enterprise information technology (IT) infrastructure plan and architecture framework that encourages effective and efficient use of state IT assets through inter-agency cooperation and cooperation.

5.a. Establish an Enterprise Architecture Governance Structure.

- Activate and support the Architecture Committee.
 - Establish the IT Enterprise Architecture Committee (EAC) with assigned resources.
 - Perform research to support EAC in its formation and operations.
 - Draft scope of committee including governance expectations and inter-committee relationships.
 - Develop an executive-level presentation for EAC kick off and new member orientation.
 - Recruit committee members based upon state entity IT requirements/size.
 - Draft committee charter.
 - Provide guidance in establishing working groups for specific domains. The working groups will guide the development of the architecture model and standards.
 - Provide resources to support regular committee meetings and operations.
 - Hold informational meetings and publish and distribute information to make the larger IT community aware of the architecture model and standards.
- Complete a planning review process within the framework of the architecture.
 - Establish the policy and procedures for the operation of the architecture model.

- Establish an ongoing review process by the EAC. Incorporate an exception policy into the review process.
- Acquire necessary resources for successful continuance of governance process.
 - Identify additional resources for dedicated Enterprise Architect position.
 - Obtain staffing support for Committee structure.

5.b. Design an Effective Enterprise Architecture Model.

- Define an accepted model:
 - Identify needs; Design, promote and implement model; Refine model as structure grows; Develop and communicate design.
 - Draft guiding principles for IT enterprise architecture.
 - Define objectives/goals for IT enterprise architecture. Emphasis will be on:
 - Efficiency and Effectiveness
 - Standards and Best Practices
 - Customer Support
 - Systems Integration and Interoperability
 - Knowledge Sharing
 - Prepare, maintain and publish a glossary, textual and graphical, for consistent and positive IT enterprise architecture communication.
 - Establish a base set of toolkits and methodologies to be used to build and maintain IT enterprise architecture.
 - Use standard or common toolkit/methodologies from entities such as NASCIO (National Association of State Chief Information Officers).
 - Use as reference the existing models from other states' IT enterprise architectures.
 - Develop, maintain and publish IT enterprise architecture models as an ongoing collaborative process with EAC, EAC domain working groups and NITOC within the governance structure/process.
 - Incorporate the use of the Enterprise Architecture Maturity Model from NASCIO to measure IT enterprise architecture

current state and future performance and progress. Conduct a needs assessment of Shared Services.

- A state centric plan needs to be developed to identify services to offer, business plan, resources needed, and other plans for implementation.

5.c Establish Standards Related to Enterprise Architecture that enable and encourage resource sharing and promote opportunities for reusability and portability.

- Document definitions for strategic tier of IT services or standards.
 - Define the strategic tiers of services from user level all the way to enterprise level by January 2005.
- Establish formal standards; involve stakeholders to participate in setting and using standards.
 - Develop, maintain and publish standards for the services that are defined.
 - Encourage enterprise participation and collaboration to establish and follow standards.
 - Promote the use of the architecture standards in strategic and technical planning, budgeting, contracting, procurement, and project oversight.
- Create and maintain an accurate and complete inventory of State of Nevada IT systems.
 - Identify current inventory of platforms and operating systems in state government by July 2005.
- Develop, maintain, and publish strategies, policies and plans to guide agencies in migrating to the strategic tier of services.

APPENDICES

Strategy Chart – Appendix A

State of Nevada DoIT Strategic Objectives	
Key Strategy: Customer Service	
Objective: Cultural Change – “Take care of our Customers” <i>Develop stronger working relationships within the Department of Information Technology (DoIT) and with DoIT customers, various communities, stakeholder groups, educational partners, governments and their agencies.</i>	
Goals:	Share strategic goals and objectives across all DoIT Units.
	Improve communication with the customer; change methods of enforcing authority and improve perceptions.
	Increase coordination and communication skills and methodology to interact with diverse agencies.
	Ensure adequate planning takes place, with execution and follow through to completion.
	Design DoIT “100 %” billing structure to allow for adequate training and planning functions.
Key Strategy: Secure Environment	
Objective: Information Security - “Defending Nevada's Technology” <i>Ensure a secure physical and technical environment and protect data and I/T resources for the successful fulfillment of the mission of the state and the agencies that provide services to the citizens of Nevada.</i>	
Goals:	Develop Information Security awareness training.
	Identify resources sufficient to accomplish Information Security Mission.
	Promote participation and collaboration of the State Information Security community.
	Establish reliable IT - Continuity of Operations (COOP) processes.
	Empower business stakeholders with consistent Information Security standards.
	Implement an accreditation model.
	Collaborate and establish effective statutory enforcement authority.

Key Strategy: Manage New Investments	
Objective: Project Oversight - “You can’t solve what you don’t know” <i>Support major IT projects through project oversight, project management standardization and training.</i>	
Goals:	Developing Information Technology Project Management Training.
	Identify, Document, and Standardize IT Planning and Production Integration Processes.
	Promote the Awareness of IT Project Oversight and Project Management Practices.
Key Strategy: Effective and Efficient	
Objective: IT Governance - “Improving IT Management” <i>Align state IT management strategy with the needs of citizens, businesses and other government entities.</i>	
Goals:	Continue to develop an enterprise wide technical advisory structure for the state.
	Continue to be at the forefront of citizen service through technology, continually improving our people, our products, and our processes.
	Meet the needs of agencies, employees, and citizens through the delivery of efficient and effective products and services.
	Create more efficient and effective solutions that are now possible.
	Eliminate islands of autonomy.
	Counter resistance to change.

Key Strategy: Enterprise-wide View	
Objective: Enterprise Architecture - “Realizing the Possibilities of 21st Century Technology” <i>Establish and administer an enterprise information technology (IT) infrastructure plan and architecture framework that encourages effective and efficient use of state IT assets through interagency cooperation and collaboration.</i>	
Goals:	Establish an Enterprise Architecture Governance Structure.
	Design an Effective Enterprise Architecture Model.
	Establish Standards Related to Enterprise Architecture that enable and encourage resource sharing and promote opportunities for reusability and portability.

Technology Trends³ – Appendix B

The Department of Information Technology has set the IT strategic objectives given the following technology trends, to ensure State government entities are positioned for future growth and fiscally sound operations.

Collaborative Planning - Creation of formal governance structures will grow to drive accountability for IT investments.

- * Portfolio models
- * Documented business measures
- * Increased participation (Agency Heads, Project Leaders, policymakers and IT Management.)

IT Policy Alignment - Public policy will be the primary determinant of the value of IT investments.

- * Delivering consistent, effective and efficient services
- * Leveraging existing investments
- * Prioritizing future investments

Connectivity - Always connected, yet mobile constituents through remote and mobile computer technologies in a multitude of form factors, e.g., handheld, cellular, pager, thin clients, information appliances.

- * Data transport gets less expensive
- * Rural digital divide continues
- * Geographic centers of excellence established
- * Virtual employees and the changing of traditional workday

Information On Demand - The expectation of continual access to information anytime, anywhere, in a more personalized context.

- * Self-service
- * Remote 24x7x365 management
- * Accelerated distributed decision-making
- * Enhanced decision-making through enterprise analytics and reporting

Standards Convergence - The integration of applications and infrastructures utilizing expanded bandwidth and increased storage capacity.

- * Enhancing business workflow models

³Input: State of New York, Technology Trends and META Group

- * Emphasis on middleware and enterprise application integration
- * Collaborative tools (Instant Messaging, Web Conferencing, etc.)

Human Capital Risk - People will continue to represent a significant risk as the economy rebounds and an increasing percentage of the public sector workforce becomes eligible for retirement and flexible work arrangements

- * Focus on skills-set assessments and risks to help define future needs
- * Sourcing strategies
- * E-employee initiatives
- * Enterprise architecture decisions

Workforce Virtualization - An increasing digitally connected workforce having access to information anywhere, anytime.

- * Balancing work, family, and play
- * Core competency strategies
- * Organizational structures, policies, governance, and architecture

* Meta Group, Inc.

Technology Assumptions⁴ – Appendix C

Through the plan development process the following assumptions regarding information technology were identified:

- Technology infrastructure will facilitate the development and operation of applications and systems to support the business objectives of the State of Nevada.
- Funding for the Executive Branch, including information technology, will remain limited for years to come.
- This plan will only apply to the Executive Branch of state government, but could be used by other political subdivisions.
- IT is an asset and will be managed as such.
- Leadership of IT will occur at the enterprise level, specifically including the State CIO, Nevada IT Operations Committee (NITOC) Governance Structure and the IT Strategic Planning Committee.
- The IT Optimization Study recommendations will be implemented over time.
- The enterprise will use a standard base technology architecture
- Security requirements, both physical and electronic, will remain a high priority and require increased emphasis and resources.
- Technology advancements will continue to accelerate requiring regular upgrade investments.
- Software and applications will continue to evolve using a set life cycle.
- New software will be developed and/or acquired.
- Existing software will be upgraded and maintained.

⁴ Input: State of Iowa, May, 2004 Information Technology Strategic Plan

- Obsolete software will be eliminated.
- Personnel skill requirements will change with evolving technology and must be maintained to meet these changing needs.
- Existing cooperative efforts between department, divisions, and independent agencies and throughout the enterprise will continue and grow.
- The number of people supported with information technology services will continue to expand as more customers are provided greater access to internally managed information.
- The amount of information available to our customers will continue to expand.
- Departments, divisions, and independent agencies will be responsible for maintaining their data, which will be shared with the enterprise.
- The integration of technology including voice, video, data, and other service types will continue to become more important and necessary.
- Business continuity and operations will require additional investment and ongoing support.
- Information technology exists to support and meet the identified needs of the business strategic plans and resultant business operations.

Strengths & Weaknesses – Appendix D

DoIT strengths include a management priority for improving governmental practices. Also, DoIT has experienced and knowledgeable staff that carries on the day-to-day business of the organization. DoIT is committed to provide quality service, specialized support and innovative solutions. And finally, DoIT has a vision for an efficient, customer-centric organization that emphasizes self-service and decision support functionality.

The effort to maintain a workforce trained in current technology and prepared for new advances remains problematic. There exists pressure from the private sector as external rates become more competitive. Also, there is resistance from internal customers to use DoIT services because they are concerned about poor service or loss of control. As always, there is resistance to changes to existing methods as new technology and improved procedures are implemented. Lastly, budgetary constraints are always limiting, particularly in the final reporting period.

Strengths	Weaknesses
Staff Care/Willingness Customer Centric	Historic Reputation
Technical ability	Staffing shortages
Knowledge base	Financial Constraints
Broad based talent	Customer input system/Problem resolution
Governor's Office Support	External Supports – Customer, LCB
IT Committee Structures	Visibility of political standing
	Legislative understanding
	Fragmented Goals; Communications
	User Communications
Department Visions	Shared Vision; Simplified Vision/Mission
Service Intent	Lack of strategic follow-up, Including employee base
	Staff buy in, Employee morale
	Investments in future – technical refresh

Principles – Appendix E

- Principle A – Statewide Representation on IT Architecture Committee – There is stakeholder involvement for statewide solutions to ensure cooperation for implementation and continuance.
- Principle B – Efficiency of Operations – Well designed architecture is required for efficient IT operations.
- Principle C - Optimization of IT Service Delivery – Decisions are made on long-term business needs and standards for the Enterprise. Balance the individual customer need on the impact for the enterprise as a whole.
- Principle D – Develop Platform Processing as a Commodity – Optimize current IT assets; improve effectiveness with lower total cost of ownership.
- Principle E – Shared Services Reduce Cost of Operations – Leverage shared services to achieve reductions of cost, increasing faster start up, and improved service levels.
- Principle F – Provide for Operational Balance – Enable the right balance between IT efficiency and political realities.
- Principle G – Enable Information Access – Breakdown stovepipes to enable integrated information to be accessed in secure and reliable manner.
- Principle H – Workforce Enhancement – More pertinent expertise and training transferability.
- Principle I – Enterprise Procurement – Execute statewide contract efficiencies.
- Principle J - Use Standard Technologies to Develop New Projects Capable of Running Cross Platform – Allow for flexibility and consistency to allow agencies to respond more quickly to IT needs.
- Principle K - Security Principles in Place and Practiced: Balanced security practices are to be in effect that support the enterprise.

- Principle L – Security Standards to Efficiently Manage the Enterprise: Breakdown stovepipes to enable common enterprise security.
- Principle M – Promotion of Security Successes: Security successes will be communicated and marketed to all levels of the state.
- Principle N – Continuity of Operation (COOP) Planning: Disaster impacts are mitigated with continuity of operations to provide the basic IT services required until full operations are reestablished.
- Principle O – Sense of Importance. Proactive influence to drive necessary changes and unfreeze the status quo; focus on the window of opportunity.
- Principle P – Commitment. The commitment to complete as planned.
- Principle Q – Customer Service. Internal processes must incorporate a customer service ethic.
- Principle R – Change Management. Processes are necessary to facilitate change.
- Principle S – Executive Leadership. Leadership role is required for change.
- Principle T – Strategic Planning Linkage. Changes are aligned with developed strategy and adequately planned.
- Principle U – Certification. Project Management Institute (PMI) Certified Associate in Project Management (CAPM) or Project Management Professional (PMP) certification completion as essential point of differentiation for Project Oversight Unit (POU) Staff. Not all projects will require CAPM or PMP certified project managers. Lesser degrees of non-PMI “certification” may be defined by the State depending on Agency requirements to manage projects with less size, scope, and complexity.
- Principle V – Depth and Breadth of Execution. Degree of Project Management (PM) mastery depending on size, scope, and complexity of projects.
- Principle W – Experience. Training is not a replacement for experience.

- Principle X – Finite Funding. Limited project management resources are available for IT projects.
- Principle Y – Total Cost of Ownership (TCO). Best Practices for TCO are based on proper deployment of technology through process integration and project management processes. The strategic life cycle of technology deployment impacts decision making.
- Principle Z – Project Management (PM) Standards and Policies. Adherence to IT project management policies and standards statewide is required.
- Principle AA – PM Essential Functionality. Qualified and effective project management is an essential function. It is not an afterthought or overhead. It is necessary for every major project. IT Project Management is a required function of planning, integration and implementation endeavors.
- Principle BB – Project Planning. Effective project planning is an essential component of successful project management
- Principle CC – Project Management Key Success Factor. Project Management is a critical success factor.
- Principle DD – Project Manager Strengths. Project management success in other disciplines does not translate to successful IT project management.

References – Appendix F

For more information about the referenced reports and initiatives visit:

Arizona

Arizona @ your service <http://www.gita.state.az.us/index.html>
Strategic Plan for IT http://gita.state.az.us/planning_inventory/2004StrategicPlan.pdf

Arkansas

Department of Information Systems http://www.dis.state.ar.us/about_dis/index.html

California

California State IT Strategic Plan http://www.cio.ca.gov/PDFs/ITStrategicPlan_111704.pdf

Florida

State Technology Office Goals and Objectives
http://sto.myflorida.com/cio/action_plan/goals_objectives.htm

Indiana

Access Indiana Web portal; current initiatives <http://www.state.in.us/ai/tech/>

Iowa

Information Technology Strategic Plan
http://das.ite.iowa.gov/governance/2004_State_IT_Strategic_Plan.pdf

Kentucky

The Governor's Office for Technology (GOT) is responsible for providing leadership, policy direction, and technical support to all executive agencies of state government in the application of IT.
<http://got.state.ky.us>

Maryland

IT Strategic Plan <http://www.ci.annapolis.md.us/government/depts/finance/plan.asp>

Massachusetts

Commonwealth of Massachusetts <http://www.mass.gov/itd>
Executive Branch Technology Strategic Planning
<http://www.mass.gov/itd/spg/publications/technologyplan/itstrategicplanning.htm>

Minnesota

Dakota County 2004 Strategic Plan http://www.co.dakota.mn.us/it/strategic_plan.htm

Mississippi

Mississippi's e-government initiatives <http://www.its.state.ms.us/et/egov/its/egov.html>
Technology Strategic Master Plan <http://www.its.state.ms.us/its/itsweb.nsf/MasterPlan?OpenForm>

New Mexico

Consolidation initiative updates <http://cio.state.nm.us/>
Enterprise Architecture <http://cio.state.nm.us/architecture/index.html>

New York

New York State Forum for Information Resource Management <http://www.nysfirm.org/>

New York State Office for Technology Strategic Goals and Initiatives http://www.irm.state.ny.us/strat/05-strategic_goals_and_initiatives.htm
Technology Trends <http://www.irm.state.ny.us/policy/p04-004/trends.htm>

Pennsylvania

Office for Information Technology <http://www.oit.state.pa.us/oaoit/site/default.asp>
Continuity of Government <http://www.oa.state.pa.us/cog/site/default.asp?cogNav=|&oacNav=|>

South Carolina

My SC Gov http://www.myscgov.com/SCSGPortal/static/home_tem4.html

Texas

E-government Services and Computer and Internet use in Texas
<http://www.dir.state.tx.us/egov/surveys.htm>
City of Austin ePerformance Measures
<http://www.ci.austin.tx.us/budget/eperf/index.cfm?fuseaction=home.Department&DEPT=560>

United States General Accounting Office

State Strategic Plan Links http://www.asjohnston.com/IT_Strategic_Plan/AppendixC.htm

Utah

Information Technology Services <http://www.its.utah.gov/>

Virginia

Fairfax County Information Technology Plan <http://www.co.fairfax.va.us/gov/dit/itplan.htm>

Washington

Washington State's Digital Government Guide provides inventory of resources, best practices and technology tools for those who will extend digital government into the future
<http://www.dis.wa.gov/role/digitalgovguide/intro.htm>
Access Washington <http://access.wa.gov/>

Wisconsin

Internet Architecture Matrix
http://enterprise.state.wi.us/home/internet/Reports_Recommendations/App_Arch_MATRIX.html

ARTICLES

e-government Initiative, Executive Order, State of Nevada, Governor Kenny Guinn, March 8, 2000

Alternative Work Schedules, Executive Order, State of Nevada, Governor Kenny Guinn, November 29, 2000

National Information Consortium, Momentum Research Group of Cunningham Communication Benchmarking the e-government Revolution: Year 2000 Report on Citizen and Business Demand http://www.nicusa.com/NIC_flash/index_flash2.htm

Hart-Teeter, Council for Excellence in Government_e-government: ***The Next American Revolution***
<http://www.excelgov.org/egovpoll/index.htm>

2004 NASCIO Recognition Awards

<http://www.nascio.org/awards/2004awards/?CFID=200005&CFTOKEN=6b576c1387d5590-DA2C08E0-4235-F250-40795D4F401BA9CA>

Digital State Survey Sustained Leadership Awards

<http://www.centerdigitalgov.com/center/02sustained.php>

Digital Government Achievement Awards

<http://www.centerdigitalgov.com/center/highlightstory.php?docid=91712>

"What Citizens Want From e-gov", Meghan E. Cook, Center for Technology in Government, University at Albany/SUNY http://www.ctg.albany.edu/resources/htmlrpt/e-government/what_citizens_want.html

"Project Management Guide", Treasury Board of Canada

http://www.cio-dpi.gc.ca/emf-cag/pmg-ggp/intro/intro_e.asp

"Security costs test states' budgets" Any corporate IT department faces these challenges, but the problem is magnified for those in charge of security for state government networks

<http://www.computerworld.com/printthis/2003/0,4814,85086,00.html>

"Making Enterprise Information Architecture Real" Information architects will formally articulate principles that enable the CIO to focus on custodianship and stewardship of information, thus improving the enterprise's understanding of the total value of information products.

<http://www.eacommunity.com/articles/openarticle.asp?ID=1823>

"Security Configuration Checklists for IT Products" NIST-National Institute of Standards and Technology <http://checklists.nist.gov/>

"Making Smart IT Choices: Understanding Value and Risk in Government IT Investments"

Center for Technology in Government <http://www.ctg.albany.edu/publications/guides/smartit2>

"Service-Oriented Architecture: The Future is Now" Service-oriented architecture (SOA) is the foundation of a new platform consisting of loosely coupled software parts.

<http://www.intelligentintegration.net/showArticle.jhtml?articleID=18900111>

OTHER GOVERNMENT TECHNOLOGY LINKS

Advisory Commission on Electronic Commerce: Created by Congress to study Internet taxation issues <http://www.ecommercecommission.org/>

Business Software Alliance: Industry organization that focuses on software copyrights and cyber security and fights software piracy <http://www.bsa.org/>

Center for Democracy and Technology: Focus on privacy/technology issues <http://www.cdt.org/>

Center for Technology in Government: The Center for Technology in Government works with government to develop information strategies that foster innovation and enhance the quality and coordination of public services. <http://www.ctg.albany.edu/>

Computer Professionals for Social Responsibility: CPSR is a global organization promoting the responsible use of computer technology. <http://www.cpsr.net/>

Digital Government Institute: Business-case focused training for government executives, managers and policy makers. <http://www.digitalgovernment.com/>

eCityGov Alliance: a partnership of local governments in Washington State that provides cross-boundary Web services for citizens and businesses <http://www.ecitygov.net/home/default.asp>

E-Gov: the Web site for the White House's e-government initiatives
<http://www.whitehouse.gov/omb/egov/index.html>

Electronic Privacy Information Center: EPIC is a public interest research center in Washington, D.C. It was established in 1994 to focus public attention on emerging civil liberties issues and to protect privacy, the First Amendment, and constitutional values
<http://www.epic.org/>

Gartner, Inc: provider of research and analysis on the global information technology industry, State of Nevada subscriber <http://www3.gartner.com/RecognizedUser>

Government Management Information Systems: The voice of state and local government information management <http://www.gmis.org/>

International Technology Education Association: ITEA is a professional association for technology education teachers who teach a curriculum called "technology education" which is problem-based learning utilizing math, science and technology principles. <http://www.iteawww.org/>

JUSTNET: Justice Technology Information Network; focus on the technology of law enforcement and corrections <http://www.nlectc.org/>

META Group, Inc: Information technology research and consulting firm, State of Nevada subscriber <http://www.metagroup.com/us/home>

National Association of State Chief Information Officers: NASCIO's mission is to foster government excellence through quality business practices, information management, and technology policy <https://www.nascio.org/>

National Association of State Telecommunications Directors: NASTD - Telecommunications and Technology Professionals Serving State Government, is a member-driven organization whose purpose is to advance and promote the effective use of telecommunications technology and services to improve the operation of state government. <http://www.nastd.org/>

National Association of Telecommunications Officers and Advisors: The National Association of Telecommunications Officers and Advisors (NATOA) is a national association that represents the telecommunications needs and interests of local governments, and those who advise local governments. <http://www.natoa.org/>

National Automated Clearing House Association: focus on electronic commerce in both the public and private sectors <http://www.nacha.org/>

National Cyber Security Partnership: The partnership established five task forces comprised of cyber security experts from industry, academia and government. <http://www.cyberpartnership.org/>

National Electronic Commerce Coordinating Council: a joint endeavor of the National Association of State Information Resource Executives, the National Association of State Procurement Officials, and the National Association of State Auditors, Comptrollers and Treasurers <http://www.ec3.org/>

National States Geographic Information Council: The National States Geographic Information Council (NSGIC) is an organization of States committed to efficient and effective government through the prudent adoption of geospatial information technologies. <http://www.nsgic.org/index.cfm>

Progress and Freedom Foundation: Studies the impact of the digital revolution and its implications for public policy <http://www.pff.org/>

Public Technology, Inc.: Technology Central for local government <http://pti.nw.dc.us/>

Urban and Regional Information Systems Association: The Urban and Regional Information Systems Association (URISA) is a non-profit association of professionals using Geographic Information Systems (GIS) and other information technologies to solve challenges in all state/provincial and local government agencies and departments. <http://www.urisa.org/>

Voice Technologies in Government: Information on Web-based voice technologies that can be utilized to improve government service delivery <http://www.voiceingov.org/>

World Foundation for Smart Communities: The World Foundation for Smart Communities is a nonprofit educational organization founded to promote the concept and facilitate the implementation of "smart communities" -- communities using information technology as a catalyst for transforming life and work to meet the challenge of the new millennium. <http://www.smartcommunities.org/>

Glossary – Appendix G

“As-Is” Architecture The current state of an enterprise’s architecture (see baseline architecture).

“To-Be” Architecture The target state of an enterprise’s architecture (see target architecture).

ACID transaction A transaction is a sequence of operations that acts as a single logical unit of work. An ACID transaction has four properties, known as ACID properties, to qualify as a transaction: 1. Atomicity. Indivisible unit of work; either all or none of the data modifications are performed. 2. Consistency. When completed, a transaction must leave all data in a consistent state. 3. Isolation. No one outside of the transaction can see data in an intermediate state. 4. Durability. After a transaction has completed, its effects are permanently in place in the system.

Adaptive Able to change to be in harmony with changed circumstances. See Adaptive Architecture.

Adaptive Able to support a wide variety of applications and evolve as technology changes.

Adaptive Architecture A set of design specifications that result in an orderly structure than can be changed to fit new circumstances without destruction of the design or plan.

Agency A governmental unit – in the narrowest sense, a governmental unit of the executive branch.

Alignment To be in the correct position relative to something else. See Business Alignment

Application A set of programs and functions that perform a given task or a set of related tasks.

Application Architecture Defines how applications are designed and how they cooperate, promotes common presentation standards to facilitate rapid training and implementation of new applications and functions. Good application architecture enables a high level of system integration, reuse of components and rapid deployment of applications in response to changing business requirements.

Application Integration Domain A set of related applications that share common data or technologies or a set of related business processes.

Architectural Artifacts The relevant documentation, models, diagrams, depictions, and analyses, including a baseline repository and standards and security profiles.

Architecture The art or science of designing structures. A set of designs and specifications that results in orderly arrangement of structural components.

Architecture A framework or structure that portrays relationships among all the elements of the subject force, system, or activity.

Architecture A set of design artifacts, or descriptive representations, that are relevant for describing an object such that it can be produced to requirements (quality) as well as maintained over the period of its useful life (change).

Architecture Product The structure of components, their interrelationships, and the principles and guidelines governing their design and evolution over time.

Architecture Repository An information system used to store and access architectural information, relationships among the information elements, and work products.

Architecture Requirements (AR) A set of boundaries and framework under which a business driven enterprise architecture must operate. AR define the basic IT requirements needed to enable and support the key enterprise business strategies or business drivers of the enterprise.

Artifact An abstract representation of some aspect of an existing or to-be-built system, component, or view. Examples of individual artifacts are a graphical model, structured model, tabular data, and structured or unstructured narrative. Individual artifacts may be aggregated.

Atomic Transaction See *ACID transaction*.

Authentication Authentication is the means by which assurance of the identity of parties to a transaction is established.

Baseline Architecture Representation of the cumulative “as- built” or baseline of the existing architecture. The current architecture has two parts: 1. The current business architecture, which defines the current business needs being met by the current technology 2. The current design architecture, which defines the implemented data, applications, and technology used to support the current business needs.

Baseline Architecture the set of products that portray the existing enterprise, the current business practices and technical infrastructure. Commonly referred to as the “As-Is” architecture.

Benchmark A set of conditions against which a product or system is measured. A benchmarking instrument was developed and implemented to determine the readiness of municipal, county and state governments to adopt the national architecture model.

Best Practices Practices that have been shown in actual application to be of value. Proven practices.

Blueprint Plan or guide, commonly used in construction, laid out logically and including essential elements to address and follow as building progresses.

Business Alignment The positioning of technology to match the needs of the business. In the Commonwealth, this implies that technology implementation support the functions of Virginia government.

Business Architecture Defines the organization and functions of the business (e.g. The Commonwealth of Virginia government) and the business processes that support those functions.

Business Architecture A component of the current and target architectures and relates to the Federal mission and goals. It contains the content of the business models and focuses on the Federal business areas and processes responding to business drivers. The business architecture defines Federal business processes, Federal information flows, and information needed to perform business functions.

Business Document Also *document*. Technically, an object that defines the parameters and/or return values of the functions exposed by a service. Logically, a logical unit of information used in a business transaction, such as a purchase order.

Business Drivers External and internal forces that create a need for business action or “drive” the organization’s business, as well as the strategies that an organization defines in response to these forces. Because business drivers are the direction-setting mechanism for organizations, it is not inaccurate to say that business drivers are business strategies. However, not all business strategies are business drivers for the purpose of defining the Enterprise Wide Technical Architecture (EWTA). As an example, certain individual department or agency level strategies, that are short term or tactical in nature, may not be suitable business drivers at the enterprise level. In essence, business drivers are those “key enterprise level business strategies” that will have the most significant impact on the architecture process.

Business Drivers Internal goals and strategies and external trends that influence the business. These are captured in three stages of drivers: 1. Industry Trends – Emerging trends within the business world that are impacting how services and information will be provided. 2. Business Best Practices – Trends and approaches that are most successful at providing services and information over time. 3. Business

Principles – Business practices and approaches that the organization chooses to institutionalize to better all provided services and information.

Business Entity A business entity is an object that implements the business rules in a system.

Business Entity Layer The business entity layer consists of business entities that carry out the steps of work defined in a process.

Business Objects Logical representation of entities that are used in a given business. Examples include citizens, constituents, suppliers, contractors, orders, inventory, etc.

Business Process Also *process*. 1. A related set of activities that when correctly performed satisfy some business goal. 2. A process orchestrates or coordinates a series of activities needed to satisfy some business goal. 3. A business process controls the step-by-step actions of executing some work, moving the system from one state to another. At each step it may perform a business operation.

Business Process Layer Defines the business processes inside a business service; it uses the business entity layer to execute the operations.

Business Process Service A service whose primary function is to orchestrate or coordinate the actions provided by other services.

Business Service A service whose primary function is to execute requests; usually managed by a process **service**.

Capital Planning and Investment Control (CPIC) Process A process to structure budget formulation and execution and to ensure that investments consistently support the strategic goals of the Agency.

Chief Information Officer (CIO) The person responsible for oversight and control of an organization's information assets and information processing systems. In Virginia this responsibility is vested in the Secretary of Technology. Effective December 1, 1999, each agency and institute of higher education in the Commonwealth must appoint an agency CIO (AIO).

Component A unit of functionality that may be amortized across multiple implementations. A software object that exposes one or more interfaces and that implements logic. In object-oriented programming and distributed object technology, a component is a reusable program building block that can be combined with other components in the same or other computers in a distributed network to form an application.

Components Individual parts of the whole. The discrete parts that must be combined to produce a working and useful result. Examples of technology infrastructure components include hardware platforms, operating systems, database systems, networks, etc. See also Domains.

Concept for Operations A description, at a relatively high level, of the participants in information sharing, the information flows involved and the functional requirements at each step of sharing.

Conceptual Architecture A general design that indicates the overall intent and outline of the target architecture lays the foundation and defines the process that will be used to develop the target architecture.

Confidentiality Confidentiality is the assurance that no one is able to eavesdrop on the transaction in progress.

Contract A binding agreement that describes all the constraints that govern any conversation between two services; this includes all of the design-time constraints as well as the run-time constraints.

Conversation Communication between two services about a specific topic or business entity. An instance of a contract, where two services are engaged in sending and receiving messages to each other.

Cost Allocation The process of assigning costs of components and processes to the business units that will benefit from the processes. See Cost Allocation Architecture.

Cost Allocation Architecture Defines the policies, procedures, standards and systems required to allocate the cost for the infrastructure components and support. Emphasis is on facilitating rapid deployment of shared resources while maximizing the benefit of multiple funding sources and types.

Council on Technology Services (COTS) The government council charged with developing a blueprint for state government information technology planning and decision making. The primary advisor to the Secretary of Technology. See: www.sotech.state.va.us/cots/about.htm

Coupling Coupling means that things are linked—that they have dependencies and that there are consequences if they are changed. A sliding scale of how tightly two services are bound together.

Current Technologies Technologies that are the current standard for use within the enterprise, tested and generally accepted as standard by industry. These items comply with or support the principles listed for the discipline.

Data Accessor Data accessors use stored procedures to access data from the database and store this data for use by the business services.

Data Representation Layer The data representation layer contains the data accessors.

Data Warehouse A data store that represents all the available related data in a commonly accessible format. Data elements in the data warehouse can be related logically and are not in a fixed relationship.

Database Architecture Defines the technical components of the software systems that support storage and retrieval of data.

Databases Software systems that support the storage and retrieval of data.

De-facto Standards Standards that have become accepted and adopted although not originally defined by consent. Often are more important than standards that have been defined by consent of standards groups. A good example is TCP/IP which is accepted as a standard instead of the competing OSI (Open Systems Interconnect) standard which was defined by a standards group.

Department of Technology Planning (DTP) The department in the Office of the Secretary of Technology charged with promoting the effective and efficient use of technology in order to serve the needs of both state government and the citizens of the Commonwealth.

Digital Divide The "digital divide" is the gap in opportunities experienced by those with limited accessibility to technology especially, the Internet. This includes accessibility limitations in Social Issues (need to talk to a person, etc.), Cultural Issues (language barriers, etc.), Disability Issues (ADA, etc.), Economic Issues (access to technology devices), Learning Issues (marketing, overcoming unfamiliarity, changing habits).

Digital Society A society or community that is well advanced in the adoption and integration of digital technology into daily life at home, work and play. A Digital Society is one that is advanced in the adoption of the New Economy.

Digital-Government In the NASCIO publication [Citizen-Centric Digital Government](#), Digital Government is defined as "the electronic delivery of government services via the Internet". A broader definition can include all electronic transactions, regardless of whether they occur on the Internet or another device.

Discipline Logical functional areas to address when building the architecture blueprint. The descriptions of the disciplines used in this document are found in Appendix B.

Domain A sphere of action or thought. A set of related technologies. A set of components that have a common relationship.

Domain Architecture A set of design principles, international standards implications, product standards and standard configurations for a set of related technologies intended to guide the usage of those technologies.

Domain Logical groupings of disciplines that form the main building blocks within the architectural framework.

Domain Teams Teams of business and technology specialists tasked to establish the architecture principles, practices and standards in a specific domain.

Durable State State that is stored on a durable medium such as a file system or a database.

E-Business Architecture Defines the standards, technologies and guidelines for electronic commerce among state agencies and between state agencies and entities and outside entities. Defines how the Commonwealth conducts electronic business with citizens of the Commonwealth.

e-Business Electronic-business; conducting business online. The term is often used synonymously with e-commerce, but e-business encompasses more than just buying and selling of products on the Web.

e-government The transformation of internal and external business processes toward customer-centricity based upon service delivery opportunities offered by new communications technologies (such as Web-based technologies) to better fulfill the purposes of government to provide efficiency and effectiveness as well as fairness and equitability.

Electronic Business (E-Business) The exploitation of internet technologies to conduct business electronically.

Electronic Collaboration The interaction of individuals and groups using electronic media. Electronic collaboration technologies promote group productivity.

Electronic Collaboration Architecture Defines the standards and infrastructure components that facilitate the interaction of the Commonwealth's workforce and promote group productivity. These include e-mail, directory services, and other person-to-person or group collaboration tools.

Emerging Technologies The most current technologies. These items will usually require testing prior to acceptance by industry as the current standard. It is generally understood that emerging technologies be considered carefully before implementing in an enterprise-wide architecture.

Emissary A design pattern by Pat Helland for a service whose primary functions are to help prepare a request to be submitted to other services and to help interpret a service's response to the request.

Enterprise A venture, especially a large undertaking requiring determination, initiative and energy. The larger view of related activities. The government functions of the Commonwealth.

Enterprise An organization supporting a defined business scope and mission. An enterprise is comprised of interdependent resources (people, organizations, and technology) that should coordinate their functions and share information in support of a common mission (or set of related missions).

Enterprise Architecture 1. The set of primitive, descriptive artifacts that constitute the knowledge infrastructure of the enterprise. 2. A strategic information asset base, which defines the business, the information necessary to operate the business, the technologies necessary to support the business

operations, and the transitional processes necessary for implementing new technologies in response to the changing business needs. It is a representation or blueprint. 3. An overall plan for designing, implementing and maintaining the infrastructure to support the enterprises business functions and underlying networks and systems.

Enterprise Architecture Development Tool-Kit A guide for municipal, county, state and federal government to develop and define adaptive enterprise architecture. Includes process models and templates with several examples.

Enterprise Architecture Policy A statement governing the development, implementation, and maintenance of the enterprise architecture.

Enterprise Architecture Products The graphics, models, and/or narrative that depict the enterprise environment and design.

Enterprise Architecture Review Board (EARB) The designated group responsible for implementation of the Commonwealth architecture standards. Reviews and approves the work of the EA Team and governs any proposed exceptions to the Commonwealth architecture. Members of the Board are drawn from a cross-section of government business and technology leaders. Normally, EARB members also serve on Domain Teams.

Enterprise Architecture Team (EA Team) The core team responsible for the development and maintenance of the Commonwealth Enterprise Architecture. Manages the work of the domain teams and is responsible for the documentation of the architecture and dissemination of information about the architecture.

Enterprise Business Strategies (EBS) Those highest priority strategies that significantly impact and/or set direction for programs across the enterprise. In essence, they "drive" the overall business of state government in the Commonwealth. See also Business Drivers

Enterprise Engineering A multidisciplinary approach to defining and developing a system design and architecture for the organization.

Enterprise Life Cycle The integration of management, business, and engineering life cycle processes that span the enterprise to align IT with the business.

Enterprise-Wide Technical Architecture (EWTA) A logically consistent set of principles that are derived from business requirements, guide the engineering of an organization's systems and technology infrastructure across the various component architectures, are understood and supported by senior management, take into account the "full context" in which the architecture will be applied, and enable rapid change in business processes and the applications that enable them.

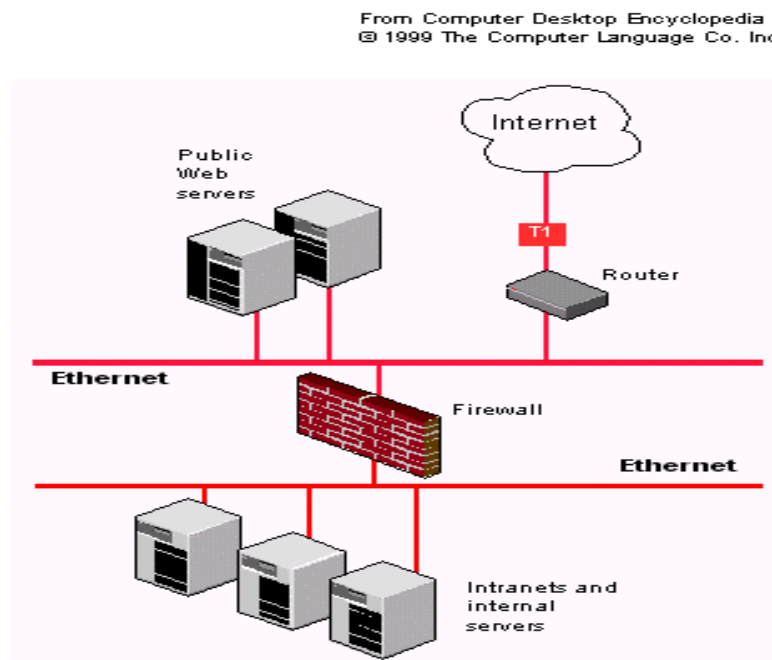
Entity An information-sharing unit. All agencies (see definition above) are entities; so are courts and legislative bodies. Private organizations that share governmental information are also entities, as are private persons.

Extranet A network or network of networks that can only be accessed by permission, usually protected by firewalls, or other security technology.

Fiefdom A design pattern by Pat Helland for a collection of loosely coupled services that encapsulate shared durable state and are deployed together.

Firewall A network device that protects networks from unauthorized entry. A firewall is a method for keeping a network secure. Firewalls are widely used to give users access to the Internet in a secure fashion as well as to separate a company's public Web server from its internal network. They are also

used to keep internal network segments secure. For example, a research or accounting subnet might be vulnerable to snooping from within.



Firewall Placement An organization's public Web sites reside outside the firewall, but intranet servers and all internal computing resources are inside the firewall.

Framework A basic structure that supports and gives shape. A broad outline or plan that serves to define the shape of the result. Illustration of the various architecture elements, used as a guide for assisting governments as they create enterprise architectures for their organizations. Currently in the NASCIO Tool-Kit there are four Frameworks: 1. Enterprise Architecture Framework 2. Architecture Governance Framework 3. Business Architecture Framework 4. Technology Architecture Framework

FTP (File Transfer Protocol) A protocol used to transfer files over a TCP/IP network (Internet, UNIX, etc.). For example, after developing the HTML pages for a Web site on a local machine, they are typically uploaded to the Web server using FTP. FTP includes functions to log onto the network, list directories and copy files. It can also convert between the ASCII and EBCDIC character codes. FTP operations can be performed by typing commands at a command prompt or via an FTP utility running under a graphical interface such as Windows. FTP transfers can also be initiated from within a Web browser by entering the URL preceded with ftp://. Unlike e-mail programs in which graphics and program files have to be "attached," FTP is designed to handle binary files directly and does not add the overhead of encoding and decoding the data.

Function A major work element that accomplishes the mission or business of an organization, such as accounting, marketing, etc. A sub-function is defined as a component of a function such as accounts receivable, accounts payable, etc. within the accounting function.

Gap Analysis The process of comparing an existing state with a desired state and determining what changes must be made to achieve the desired state.

GB 1. (GB) (gigabyte) One billion bytes (technically 1,073,741,824 bytes). 2. (Gb) (gigabit) One billion bits (technically 1,073,741,824 bits). Lower case "b" for bit and "B" for byte are not always followed and often misprinted. Thus, Gb may refer to gigabyte.

Geographic Information Systems (GIS) Software and hardware that combines discrete data with spatial data.

GIS Architecture Defines the standards and technologies for implementation of Geographic Information Systems across the Commonwealth.

Governance The act or process of governing. Providing authorization, direction or control. The Enterprise Architecture Governance Model defines the roles and relationships of the participating agencies, individuals and groups that oversee and control the development and maintenance of the Commonwealth Enterprise Architecture.

HIPAA Acronym for the [Health Insurance Portability and Accountability Act](#) of 1996, which addresses such items as privacy and electronic sharing of information.

Hits The number of times a program or item of data has been accessed or matches some condition. For example, when you download a page from the Web, the page itself and all graphic elements that it contains each count as one hit to that Web site. If a search yields 100 items that match the searching criteria, those 100 items could be called 100 hits.

Home Page The first page retrieved when accessing a Web site. It serves as a table of contents to the rest of the pages on the site or to other Web sites.

Idempotency A pattern for an implementation in which a message will have the same effect whether received once or multiple times.

IEEE [Institute of Electrical and Electronics Engineers](#), involved with setting standards for computers and communications.

Industry Trends Emerging trends within the business world that impact the provision of services and information.

Information Architecture Defines the overall data architecture. Describes the logical structure of databases and the methodology used to correlate data in multiple databases. Provides a framework for defining responsibility for data integrity and distribution.

Infrastructure The basic framework of an organization or operation. Infrastructure components are units of technology that support the operation of the information systems of the Commonwealth. Those components that together offer, through connectivity and computing capability, the potential for all state entities to communicate with each other using voice, video, and data. Statewide infrastructure includes enterprise systems, transport and connectivity, and activities to monitor, maintain, secure, and recover the systems.

Infrastructure Domain A set of related underlying technologies that can be considered as a unit for determining standards and best practices.

Integration The process of bringing together related parts into a single system. To make various components function as a connected system. The ability to access and exchange critical information electronically at key decision points throughout the enterprise.

Internet An international network of networks based on TCP/IP protocols. 1. A large network made up of a number of smaller networks. 2. (Internet) "The" Internet is made up of more than 65 million computers in more than 100 countries covering commercial, academic and government endeavors. Originally developed for the U.S. military, the Internet became widely used for academic and commercial research. Users had access to unpublished data and journals on a huge variety of subjects. Today, the Internet has become commercialized into a worldwide information highway, providing information on every subject known to humankind. The Internet's surge in growth in the latter half of the 1990s was

twofold. As the major online services (AOL, CompuServe, etc.) connected to the Internet for e-mail exchange, the Internet began to function as a central gateway. A member of one service could finally send mail to a member of another. The Internet glued the world together for electronic mail, and today, the Internet mail protocol is the world standard. Secondly, with the advent of graphics-based Web browsers such as Mosaic and Netscape Navigator, and soon after, Microsoft's Internet Explorer, the World Wide Web took off. The Web became easily available to users with PCs and Macs rather than only scientists and hackers at UNIX workstations. Delphi was the first proprietary online service to offer Web access, and all the rest followed. At the same time, new Internet service providers rose out of the woodwork to offer access to individuals and companies. As a result, the Web has grown exponentially providing an information exchange of unprecedented proportion. The Web has also become "the" storehouse for drivers, updates and demos that are downloaded via the browser. Although daily news and information is now available on countless Web sites, long before the Web, information on a myriad of subjects was exchanged via Usenet (User Network) newsgroups. Still thriving, newsgroup articles can be selected and read directly from your Web browser. Chat rooms provide another popular Internet service. Internet Relay Chat (IRC) offers multi-user text conferencing on diverse topics. Dozens of IRC servers provide hundreds of channels that anyone can log onto and participate in via the keyboard.

Internet Domain Names An Internet domain name is an organization's unique name combined with a top-level domain name (TLD). For example, computerlanguage.com would be considered a "second level domain," although many also call it a "root domain." Following are examples of top level domains: .com=commercial, .net=gateway or host, .org=non-profit organization, .edu=educational and research, gov= government, .mil=military agency. Int=international intergovernmental. Outside of the U.S., the top-level domains are typically the country code; for example, UK for United Kingdom.

Interoperability The ability to function separately or together. The capability to allow users to readily share data among applications residing on varying combinations of hardware and software within and between existing networks.

Intranet A network or network of networks based on internet technologies that are not open to access from the Internet. An in-house Web site that serves the employees of the enterprise. Although Intranet pages may link to the Internet, an intranet is not a site accessed by the general public. Using programming languages such as Java, client/server applications can be built on Intranets. Since Web browsers that support Java run under Windows, Mac and UNIX, such programs also provide cross-platform capability. Intranets use the same communications protocols and hypertext links as the Web and thus provide a standard way of disseminating information internally and extending the application worldwide at the same time. 2. The term as originally coined in the definition above has become so popular that it is often used to refer to any in-house LAN and client/server system.

ISO The [International Organization for Standardization](#), Geneva, is an organization that sets international standards. The U.S. member body is [ANSI](#).

IT Governance Cross-jurisdictional organizational structure that provides a decision-making process for the determination of the services, architecture, standards and policies for the organizations IT. (Determination of who does what and how it gets decided as to who does what.)

IT Infrastructure The systems and network hardware and software that supports applications. IT infrastructure includes servers, hubs, routers, switches, cabling, desktop, lap and handheld devices.

Layered Model A way of representing the relationship of different sets of technologies, processes and protocols that infers that the interactions of the different layers are in series. Each layer interacts with the layers adjacent to it and interactions with other layers are always through the adjacent layers.

Legacy Systems Those systems in existence and either deployed or under development at the start of a modernization program. All legacy systems will be affected by modernization to a greater or lesser extent. Some systems will become transition systems before they are retired. Other systems will simply be retired as their functions are assumed by modernization systems. Still others will be abandoned when

they become obsolete. An automated system built with older technology that may be unstructured, lacking in modularity, documentation and even source code.

Lexicon Provides a glossary and cross-reference for words that may have multiple meanings. The purpose is to create common definitions to allow for clearer understanding.

Long Running Transaction Also *saga*. An implementation of a business process or part of a business process that contains the logic to compensate for the activities that have already been executed in case of cancellation.

Mandate An authoritative command or instruction.

MB 1. (MB) (megabyte) One million bytes (technically 1,048,576 bytes). 2. (MB) (motherboard) On references to basic hardware components, MB often means motherboard or mainboard. 3. (Mb) (megabit) One million bits (technically 1,048,576 bits). Lower case "b" for bit and "B" for byte are not always followed and often misprinted. Thus, Mb may refer to megabyte.

Message A unit of information transmitted electronically from one service to another.

Methodology A documented approach for performing activities in a coherent, consistent, accountable, and repeatable manner.

Middleware Software systems that facilitate the interaction of disparate components through a set of commonly defined protocols. The purpose is to limit the number of interfaces required for interoperability by allowing all components to interact with the Middleware using a common interface.

Middleware Architecture Defines the components that create integration among the client and server systems to improve the overall usability of the distributed architecture. Middleware provides interfaces between applications and network communications and platform technologies.

Models Representations of information, activities, relationships and constraints.

NASCIO, The National Association of State Chief Information Officers represents state chief information officers and information resource executives and managers from the 50 states, six U. S. territories and the District of Columbia. State members are senior officials from any of the three branches of state government who have executive-level and statewide responsibility for information resource management.

Network Hardware and software components that support the exchange of information between systems.

Network Architecture Defines the communications infrastructure for the Commonwealth. Defines the various topologies, carrier services and protocols necessary to facilitate the interconnection of the Commonwealth's institutions of government and education. Included in this architecture is the definition of both internal networks and connections to external networks.

NSR National Systems & Research Co. is the contracted company, working with NASCIO as a technical partner, to support the development of a model adaptive enterprise-wide architecture template for municipal, county and state government use in establishing enterprise architecture.

N-Tier Application Applications built using a layered model approach. The internals of each tier are unique to the implementation but the interactions between the tiers are defined. N-tier does not relate to the number of systems involved. It relates to the defined interfaces that allow different tiers to be changed or replaced without affecting the other tiers.

Object Attributes The characteristics of an object. The elements of data that define a given object. For example, engine size is an attribute of cars. All cars will have the attribute but the value of the attribute will differ.

Open System A system that supports commonly accepted standards for inter-operation with other systems.

Output Management The management of documents and reports. Output management focuses on the finished product, not the process used to create the product.

Platform Architecture Defines the technical components of the infrastructure including client and server platforms, the operating systems and interfaces supported.

Platforms Hardware and software systems that can be used for information processing.

Policies The rules and regulations set by the organization. Policy determines the type of internal and external information resources employees can access, the kinds of programs they may install on their own computers, as well as their authority for reserving network resources.

Policy A policy defines the run-time rules that govern communication and service behavior.

Port The end point or address Uniform Resource Locator (URL) of a message.

Port Type See *service interface*.

Practices Established or customary methods or procedures.

Principle 1. A statement of preferred direction or practice. Principles constitute the rules, constraints, and behaviors that a bureau will abide by in its daily activities over a long period of time. 2. Essential truths upon which other truths are based. Guiding statements of position that communicated fundamental elements, truths, roles or qualities that must be exhibited by and enterprise. 3. A component of the strategic direction. In terms of the Federal Enterprise Architecture, the principles are statements that provide strategic direction to support the Federal vision, guide design decisions, serve as a tie breaker in settling disputes, and provide a basis for dispersed, but integrated, decision making.

Privacy, Security and Access (PSA) The related issues of citizen privacy, the requirement to protect data from unauthorized access or modification and the need for controlling access to data.

Process A series of actions performed repeatedly in sequence to achieve a desired outcome. See *business process*.

Project A discrete set of actions performed over a given period of time to achieve a given objective.

Project Management Information Technology Project Management, for purposes of Nevada Department of Information Technology's Strategic Plan.

Proprietary Legally made or distributed only by those holding patents or rights. Most standard operating systems and software are proprietary. Owned by a private individual or corporation.

Protoco Rules governing transmitting and receiving of data.

Reference Data A composition of snapshot data used by clients of a service.

Repository An information system used to store and access architectural information, relationships among the information elements, and work products.

Saga See *long running transaction*.

Scalability The ability to use the same applications and systems on all classes of computers from personal computers to supercomputers.

Secretary of Technology (SOTECH) The governor's cabinet secretary responsible for the planning and implementation of information technology in the Commonwealth. The de-facto CIO and chief architect for the Commonwealth Enterprise Architecture.

Security Safeguards against unauthorized access to or modification of data in systems. Must be balanced against the need for access and the rights of citizens to privacy. See also PSA.

Security Architecture Defines the security standards and policies necessary to both protect the information assets of the Commonwealth and to make the information available to the citizens and workforce of the Commonwealth.

Sequencing Plan A document that defines the strategy for changing the enterprise from the current baseline to the target architecture. It schedules multiple, concurrent, and interdependent activities and incremental builds that will evolve the enterprise.

Service A software component whose behaviors with respect to its clients are message driven.

Service Agent A service whose primary functions are to help prepare a request to be submitted to other services and to help interpret a service's response to the request.

Service Façade A service façade exposes the functionality of a system to the outside world.

Service Interface Definition of a particular role in a process agreement.

Snapshot State A snapshot exposes a restricted view on the state of a service at a point in time. A snapshot needs not be current.

Spewak EA Planning Methodology Formal methodology for defining architectures for the use of information in support of the business and the plan for implementing those architectures developed and published by Steven H. Spewak.

Stable Data A snapshot whose meaning and interpretation does not change across space and time.

Standard 1. A model to be followed or imitated. Set by custom or consent. See De-facto Standards 2. Sets of criteria, voluntary guidelines and best practices. Some may be mandatory. 3. A component of the FEAF. Standards are a set of criteria (some of which may be mandatory), voluntary guidelines, and best practices. Examples include: 1. Application development 2. Project management 3. Vendor management 4. Production operation 5. User support 6. Asset management 7. Technology evaluation 8. Architecture governance 9. Configuration management 10. Problem resolution

Stateful Conversation Communication between parties in which information relating to aspects of previously exchanged data must be recorded to allow meaningful exchanges subsequently.

Stateless Conversation Communication between parties, where all messages can be interpreted independently; the service does not need to remember previous requests and responses.

Sunset Technologies Technologies that have been phased out and cannot be used within the organization past a specified date.

System 1. A collection of components organized to accomplish a specific function or set of functions. 2. set of different elements so connected or related as to perform a unique function not performable by the elements alone (Rechtin 1991).

Systems Development Life Cycle (SDLC) Guidance, policies, and procedures for developing systems throughout their life cycle, including requirements, design, implementation, testing, deployment, operations, and maintenance.

Systems Management The process of controlling, monitoring and reporting the status and performance of the hardware and software components.

Systems Management Architecture Defines how the hardware and software components of the infrastructure will be monitored and controlled. Includes the automation and control of platforms and associated resources, networks and applications and the coordination and control of work flowing through the infrastructure systems. Focuses on issues of configuration management, event and state management, fault detection and isolation, performance measurement, and problem reporting.

Target Architecture Representation of a desired future state or “to be built” for the enterprise within the context of the strategic direction. The target architecture is in two parts: Target Business Architecture—defines the enterprise future business needs addressed through new or emerging technologies Target Design Architecture—defines the future designs used to support future business needs.

Technology Architecture Blueprint Levels The term used to refer to the various levels of the Technology Architecture Blueprints. In this Tool-Kit, the levels include Domain, Discipline, Technology Area, Product Component and Compliance Component.

Technology Baseline An inventory of the “as is” state of technology. Identifies existing technology to determine what can be leveraged for the future and what changes must be made to achieve the desired state.

Technology Drivers Internal business processes or needs and external innovation that influence technology. These are captured in three stages: 1. Technology Trends – Emerging trends within the technology world that are impacting how services and the IT portfolio will be provided. 2. IT Best Practices – Trends and approaches that are most successful at providing services and IT portfolio. 3. IT Principles – Those practices and approaches that the organization chooses to institutionalize to better all provided services and IT portfolio pieces.

Technology Tools or tool systems by which we transform parts of our environment and extend our human capabilities (Tornatzky and Fleischer 1990).

Technology Trends Existing patterns of change that can be used to infer or predict the future of technology.

Template A form used as a guide, such as a document in which the standard parts are already included and the variable parts are completed as appropriate.

Transaction A single unit of work in which all parties must agree that the work should and can be done.

Transitional EA Components Representation of a desired state for all or part of the enterprise for an interim milestone between the baseline architecture and the target architecture. A time- sliced set of models that represent the increments in the sequence plan.

Trust The confidence a service has in the reliability of other services and the information that they provide.

Twilight Technologies Technologies being phased out by the enterprise.

User Interface Process A service whose primary function is to orchestrate or coordinate the actions provided by user interface services.

User Interface Service A service handling the interaction with one or more humans

Web Application Software based on the Web. This can refer to almost anything Web related, including a Web browser or other client software that can access the Web. It can refer to software that runs on Web sites or software that is stored on Web sites and downloaded to the user.

Web Hosting Placing a customer's Web page or Web site on a commercial Web server. Many ISPs host a personal Web page at no additional cost above the monthly service fee, while multi-page, commercial Web sites are hosted at a very wide range of prices. The customer's registered domain name is typically used. A single computer can hold hundreds or even thousands of small Web sites, while larger Web sites use a dedicated computer or multiple computers.

Web Server A computer that provides World Wide Web services on the Internet. It includes the hardware, operating system, Web server software, TCP/IP protocols and the Web site content (Web pages). If the Web server is used internally and not by the public, it may be known as an "intranet server." The term may refer to just the software and not the entire computer system. In such cases, it refers to the HTTP server that manages Web page requests from the browser and delivers HTML documents (Web pages) in response. The Web server also executes server-side scripts (CGI scripts, JSPs, ASPs, etc.) that provide functions such as database searching and e-commerce. A single computer system used to provide all the Internet services for a department or a small company would include the HTTP server (Web pages), FTP server (file downloads), NNTP server (newsgroups) and SMTP server (mail service). This system with all its services could be called a Web server. Web servers are also often used for vertical applications. Any network device, such as the print server in the example below, can contain an internal Web server (HTTP server) as the means for configuring the unit.

Web Site A server that contains Web pages and other files which is online to the Internet 24 hours a day.

Web-based Application An application that is downloaded from the Web each time it is run. The advantage is that the application can be run from any computer, and the software is routinely upgraded and maintained by the hosting organization rather than each individual user. Some envision a future where everything is stored and downloaded from the Web, which is a return to the centralized processing architecture of the 1960s and 1970s.

World Wide Web An Internet facility that links documents locally and remotely. The Web document, or Web page, contains text, graphics, animations and videos as well as hypertext links. The links in the page let users jump from page to page (hypertext) whether the pages are stored on the same server or on servers around the world. Web pages are accessed and read via a Web browser, the two most popular being Internet Explorer and Netscape Navigator. In the last half of the 1990s, the Web became "the" center of Internet activity, because the Web browser provided an easy, point and click interface to the largest collection of online information in the world. Ever since the Web became the focal point of the Internet, the amount of information has increased at a staggering rate. The Web has also turned into an online shopping mall as almost every organization has added e-commerce capabilities. In addition, the Web has become a multimedia delivery system as new browser features and plug-in extensions allow for audio, video, telephony, 3-D animations and videoconferencing. Most browsers also support the Java language, which allows applications to be downloaded from the Net and run locally. The fundamental Web format is a text document embedded with HTML tags that provide the formatting of the page as well as the hypertext links to other pages (URLs). HTML codes are common alphanumeric characters that can be typed with any text editor or word processor. Numerous Web publishing programs provide a graphical interface for Web page creation and automatically generate the codes. Many word processors and publishing programs also export their documents to HTML, thus users without learning any coding system can create Web pages. The ease of page creation has helped fuel the Web's growth. Web pages are maintained at Web sites, which are computers that support the Web's HTTP protocol. When you access a Web site, you generally first link to its home page, which is an HTML document that serves as an index, or springboard, to the site's contents. Large organizations create and manage their own Web

sites. Smaller ones have their sites hosted on servers run by their Internet service providers (ISPs). Countless individuals have developed personal Web home pages as many ISPs include this service with their monthly access charge. Individuals can post their resumes, hobbies and whatever else they want as a way of introducing themselves to the world at large. The Web spawned the Intranet, an in-house, private Web site for internal users. It is protected from the Internet via a firewall that lets Intranet users out to the Internet, but prevents Internet users from coming in.

Zachman Framework Classic work on the concepts of information systems architecture that defined the concept of a framework and provided a 6x6 matrix of architecture views and perspectives with products.

Document History			
Ver	Date	Reason for Change	Initiator's Name
0.1	09/18/00	Rough Draft of document	TS
0.4	10/19/00	Preparation of draft for governor staff	TS
1.0	10/20/00	For budget office	TS
1.1	12/05/00	Incorporate addendum D & E document	TS/MT
2.0	1/29/01	Revise - Quarterly Update	AM/KAR
3.0	3/15/01	Revise - Quarterly Update; Add tactical	AM/KAR
3.5	7/31/01	Quarterly Update; Minor revisions; New Capacity Charts	AM/BG/MT
4.0	10/31/01	Quarterly Update: Updates to Appendices (B,D,F), Incorporate two new Appendices (J & K), Updates to Plan, Vision.	AM/DM/KA/MT/PS
5.0	1/31/05	Revise – Final Update	AM